PP II
22/10/24
atk

Total Marks: 75

Time: 3hrs

20M

Q. 1 Attempt all multiple-choice questions (MCQ)

1. The ratio of void volume to bulk volume is known as
   a. Porosity
   b. Tapped Density
   c. Granule Volume
   d. Bulk Density

2. Out of the following fluids, find out the odd one on the basis of their rheological behaviour:
   a. Distilled water
   b. Glycerine
   c. Ethanol
   d. Starch suspension

3. Which of the following is an example of a lyophobic colloid?
   a. Gold
   b. Gelatin
   c. Acacia
   d. Albumin

4. The effect of temperature on rate of reaction is explained by
   a. Nernst equation
   b. Arrhenius equation
   c. Noyes whitney equation
   d. Fick's law

5. During elastic deformation, the stress–strain relationship for a specimen is described by
   a. Hooke's law
   b. Boyle's law
   c. Beer Lambert's law
   d. Charle's law

6. Accelerated stability testing is done to
   a. Predict diffusion constant
   b. Predict dissociated constant
   c. Predict shelf life of the formulation
   d. Determine activation energy

7. A deformation that recover after the release of stress is known as
   a. plastic deformation
   b. elastic deformation
   c. psuedoplastic deformation
   d. creep

8. Coacervate formation means
   a. Mixing of oppositely charged hydrophilic colloids and separation of colloidal rich layer.
   b. Mixing of similar charged hydrophilic colloids and separation of colloidal rich layer.
   c. Mixing of oppositely charged molecular dispersions and separation of colloidal rich layer.
   d. Mixing of oppositely charged hydrophilic colloids and hydrophobic and separation of colloidal rich layer.

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9. Brook-field viscometer is an example of _____ viscometer.
   a. Cone and plate
   b. Extrusion
   c. Rotating sphere
   d. Rotating spindle

10. In flocculated suspension, the supernatant layer is _____
    a. Cloudy
    b. Clear
    c. Turbid
    d. Opaque

11. The phenomenon of protection means:
    a. hydrophobic colloid adsorb on the surface of hydrophilic colloid and form a protective layer.
    b. hydrophilic colloid adsorb on the surface of hydrophobic colloid and form a protective layer
    c. hydrophilic coarse particles adsorb on the surface of hydrophobic
    d. hydrophilic molecular dispersion adsorbs on the surface of hydrophobic colloid and form a protective layer

12. Bingham bodies are materials that exhibit
    a. Plastic flow
    b. Pseudoplastic flow
    c. Dilatant flow
    d. Newtonian flow

13. The type of emulsion can be easily identified using the following test except _____ test.
    a. Dye solubility
    b. Creaming
    c. Dilution
    d. Redispersibility

14. _____ is the reaction of compounds and molecular oxygen
    a. Photolysis
    b. Hydrolysis
    c. Auto-Oxidation
    d. Thermolysis

15. Which of the following is the half- life of Second order reaction?
    a. $t_{1/2} = A_0/2k$
    b. $t_{1/2} = 0.693/k$
    c. $t_{1/2} = A_0/2k$
    d. $1/2 = 1/ak$

16. While using sedimentation method for size analysis, addition of a deflocculating agent to a suspension is necessary in order to
    a. accelerate the process of sedimentation
    b. make the particles spherical
    c. prevent the aggregation
    d. satisfy Reynolds number

17. In the potential energy curves, the deflocculated suspension represents the ....
a. Primary minimum
b. Secondary minimum
c. Tertiary minimum
d. Primary maximum

18. Andreasen apparatus is widely used to determine particle size distribution
a. Microscopy method
b. Sedimentation method
c. Sieving method
d. Conductivity method

19. _____ is an example of hydrophilic colloid used in preparation of an emulsion
a. Acacia
b. Veegum
c. Span
d. Bentonite

20. Heckel relationship deals with
a. Force Density Relationship
b. Temperature Density relationship
c. Force Dissolution relationship
d. Temperature - surface tension relationship

Q.2 ANSWER ANY 2 OF FOLLOWING 3   **10 Marks Each**
1. State Stoke's law with its significance in sedimentation of suspension & write a note on interfacial properties of suspended particles in suspension.
2. Explain the optical properties of colloids in detail.
3. Explain true density, angle of repose & the Helium displacement method.

Q.3 ANSWER ANY 7 OF FOLLOWING 9   **05 Marks Each**
1. What are the methods used for determine particle size? Explain in detail any one.
2. Describe elastic and plastic deformation of solids
3. Classify viscometers. Describe the principle, construction and working of cup and bob viscometer
4. Discuss in brief the factors influencing the physical stability of an emulsion
5. Explain with the help of Arrhenius equation how does temperature influence drug degradation.
6. Explain DLVO theory in detail
7. Mention the measures that could be taken to prevent or reduce hydrolytic decomposition of drugs.
8. Discuss the factors influencing bulkiness and flow properties of pharmaceutical powders.
9. Define bulges and spurs. What is thixotropy and explain importance of thixotropy in suspension formulation.

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